

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

TITLE:      **TOY FOR CREATING  
VISUAL AND AUDIAL PATTERNS**

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## BACKGROUND OF THE INVENTION

2        This is a continuation-in-part application of co-pending application Serial No. 10/013,574  
3        filed December 11, 2001, which was a continuation application of application Serial No.  
4        09/736,775, filed December 14, 2000, now U.S. Patent No. 6,435,688, issued August 20, 2002.

5        The present invention relates generally to a game toy for recreation; amusement; education;  
6        and, more particularly, to a game toy that creates unique visual and audial patterns. Colored, lighted,  
7        or luminescent members which may be activated before or after insertion within an inflated bladder  
8        result in the members being observable or detectable outside the bladder by an observer of the  
9        bladder. The members are shaped to roll along the inner arcuate walls of the bladder to create a  
10      unique sound and visual impression.

11       U. S. Pat. No. 5,947,581 teaches the insertion of a light button within the gas region of a  
12      balloon which is free to move about in the balloon. Such buttons are disclosed in U.S. Pat. No.  
13      5,143,439. The button has a mechanical on/off switch. Thus, a significant disadvantage of the light  
14      button is that it must be activated prior to inflation of the balloon. The buttons are generally disk or  
15      wafer shaped. The buttons may bounce or rebound about within the balloon, but do not roll along  
16      the arcuate inner walls of the balloon creating a distinctive swirling sound along with a vibrant visual  
17      impression.

18       In the present invention elongated cylindrical sticks or generally spherical or elliptical  
19      members may be colored to cooperate with the balloon color. Such colored members may simply be  
20      colorful plastic or rubber tubes or rods (hollow or solid). Further, the members contain  
21      chemiluminescent compositions or agents or may be members with lighted ends.

1 It is desirable to provide a toy for use by children that is attractive, interesting, and kinetic  
2 which holds the attention through both the visual and audial senses.

## **SUMMARY OF THE INVENTION**

4 The present invention provides a toy which may be luminescent with a unique sound capacity  
5 for recreation, amusement and education. The present invention provides an inflatable bladder or  
6 balloon having an inlet port or inflation mouth designed to accommodate one or more luminescent  
7 members, colored rods or sticks, or spherical or elliptical balls, or light tubes. The luminescent  
8 members, colored rods, or spherical or elliptical balls, or lighted sticks are sized and shaped so as to  
9 be introduceable to the bladder via the inlet port. The luminescent members may be activated  
10 before, during, or after insertion. After insertion of the members into the bladder, the bladder is  
11 inflated and a closure is provided to ensure maintenance of an inflated state for the bladder. As a  
12 result of the inflation, there exists additional space in which the luminescent members, or spherical  
13 or elliptical balls, or colored or lighted sticks may move about within the bladder. The additional  
14 space created by the inflation of the bladder, coupled with an agitation of the bladder containing the  
15 members, results in the members emitting light or clearly being visible as the members move about  
16 inside inflated bladder. More specifically, the members are generally elongated, cylindrical,  
17 spherically or elliptically shaped and are adapted to roll lengthwise along the inside walls of the  
18 balloon. The toy makes a very distinctive sound when the members roll along inside the walls of the  
19 bladder. In some situations, the user may wish to use simple elongated, cylindrical colored sticks,  
20 balls or light tubes to replace, or in addition to, chemiluminescent sticks. This approach is effective  
21 when the toys are used in lighted environments, rather than operated in a dark or unlighted  
22 environment. The toy creates unusual visual designs and audial perceptions notable outside the  
23 inflated bladder.

1 The present invention, thus, provides an amusement device. It also provides a child's game  
2 that is inexpensive. The present invention also provides a toy that is luminescent (which may be  
3 activated even after the balloon is inflated) and may be played with in the dark. The device  
4 indirectly develops abilities in mathematics and pattern recognition. The present invention provides  
5 an inflatable bladder toy which may be easily constructed from components in kit form.

## **BRIEF DESCRIPTION OF THE DRAWINGS**

7 Fig.1 illustrates a cutaway perspective view of the present invention with the bladder inflated  
8 and a multiplicity of chemiluminescent members, colored sticks, spherical or elliptical rollers and  
9 light tubes inside the bladder.

**Fig. 2** illustrates a toy kit with a stick member external to the deflated bladder.

Fig. 3 shows a view of the deflated bladder containing a stick member.

Fig. 4 shows a cutaway perspective of the inflated bladder containing a chemiluminescent member as agitated, activated, and rolling lengthwise along the inner, arcuate walls of the bladder. Also illustrated are colored and lighted sticks and rollers.

## **DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT**

16 For the purposes promoting and understanding of the principles of the invention, reference  
17 will now be made to the embodiment illustrated in the drawings and specific language will be used  
18 to describe the same. It will nevertheless be understood that no limitations of scope of the invention  
19 is hereby intended, such alterations and further modifications in the illustrated device, and such  
20 further applications of the principles of the inventions as illustrated therein being contemplated as  
21 would normally occur to one skilled in the art to which the invention relates.

1 Referring now in more detail to the drawings, in which like numerals indicate like parts  
2 throughout the several views, Figs 1-5a show an assembled tool (10), kit (10a), and method of  
3 assembly according to a preferred embodiment of the present invention.

4 Fig. 1 shows the preferred luminescent toy assembly (10) includes an inflatable bladder (20),  
5 an inlet port or mouth (30) on a terminal end of the inflatable bladder (20), a closure for sealing  
6 (30a) the inflated bladder also located at the terminal end of the inflatable bladder (20) thereby  
7 preventing deflation of the inflatable bladder (20). The closure (30a) is functionally secured at the  
8 inlet port (30). The sealing closure may be a simple pinch ring which fits over the bladder and, when  
9 crimped, seals the inlet port (30). Fig. 4 shows an alternative closure (30a<sup>1</sup>) which has a one-way  
10 check valve (80) within the closure. The closure (30a<sup>1</sup>) is a tube which allows the user to blow into  
11 the bladder but does not allow air to escape. Further, the closure prevents the light stick (40) from  
12 accidentally going into the user's mouth.

13 Fig. 1 shows that a combination of chemiluminescent members (40), colored sticks (41a and  
14 41b), a spherical ball (44), an elliptical roller (45), and an end lighted tube (42) may be combined in  
15 a balloon (20). The figure shows one solid colored stick (41a) and one hollow stick (41b). The  
16 hollow sticks or tubes create a varying swirl sound when rolling within the balloon. It should be  
17 understood that the stick inside the bladder may be a clear tube 42 with a lamp or LED type bulb  
18 (43) on one or both ends. The tube (42) reflects the light which may be colored along the tube  
19 surface creating the desired visual effect.

20 Fig. 2 shows the separate parts of the present invention. One or more sticks (40, 41a, 41b),  
21 tubes (42), balls (44), or rollers (45) are suitably sized and cylindrically shaped to be insertable  
22 through the inlet port (30) of the inflatable bladder (20). As previously stated, in some situations the  
23 members (40) may be elongated, spherically, elliptically, or cylindrically shaped colored sticks or

1 end lighted tubual lamps. Fig. 2 shows the bladder (20) deflated. These members (40) which are  
2 chemiluminescent tubes contained within the bladder (20) may be activated by agitation such that  
3 the chemical constituents within the chemiluminescent members (40) are mixed and a light beam  
4 becomes visible. Alternatively, the members may be initially frozen and activated upon thawing.  
5 The member is thereby activated after insertion into the balloon. One style of chemiluminescent  
6 light is known as CYALUME,® a product of American Cyanomid Corporation. One distributor of  
7 such light sticks (40) is Omnidglow Corporation, Novato, California. These sticks are described in  
8 U.S. Patent Nos. 4,076,645; 4,313,843; 4,678,608; 4,717,511; and 5,122,306.

9 Where the stick is tubual lamp (42), the lamp may be of a combined battery and light  
10 construction. A bulb may be affixed to one or both ends of the stick. The tubual portion of the lamp  
11 may be clear, colored, or simply reflective of the end light to provide the desired visual effect. The  
12 light may be activated before or after the tube is inserted into the bladder.

13 The inflatable bladder (20) is a one piece construct having a first terminus at the inlet port  
14 (30). The inflatable bladder (20) may be colored, transparent, or semitransparent such that the light  
15 emitted or reflected by the enclosed members (40, 41, 41a, 42, 44, 45), is visible outside the  
16 inflatable bladder (20) membrane. The inflatable bladder (20) also acts as a container within which  
17 the members (40) are confined. The bladder (20) acts so as to restrict the movement of the sticks  
18 within the boundaries of the bladder (20). Further, due to its physical properties, the bladder (20)  
19 may cause the sticks, balls or rollers to rotate against the arcuate internal walls of the inflatable  
20 bladder (20) in a random fashion so as to create a chaotic, attractive, and aesthetically pleasing  
21 arrangements and visual designs and audial perceptions to an observer (see Fig. 4). Sticks, balls, and  
22 rollers (40, 41a, 41b or 42, 44, or 45), with generally elongated, spherical, elliptical, and cylindrical  
23 shapes, cooperate with the inflated bladder walls to create a unique sound as the sticks roll along the

1 inner arcuate wall surface of the balloon yielding a swirling sound audible outside the balloon.  
2 Hollow sticks or textured surfaced sticks or rollers create a uniquely distinct sound as compared to  
3 the solid members or tubual lamps that have smoother outer surfaces.

4 All of the Figs. 1-4 illustrate the elongated, cylindrical shape of the members. The outer  
5 surface of the members (not the ends) roll (as indicated by the rotation arrow in Fig. 4) along the  
6 inner walls of the balloon like logs or balls on an arcuate surface to make a swirling sound. The  
7 members may also be bounced or rebound from the walls; this yields a popping or snapping sound.

8 The inlet port or mouth (30) of the inflatable bladder (20) is positioned at a terminus of the  
9 inflatable bladder (20) such that the inflatable bladder (20) may be sufficiently inflated and further  
10 such that sticks of suitable size and shape may be inserted into the inflatable bladder (20) (Fig. 3).  
11 The inlet port (30) provides an opening which communicates and traverses the external environment  
12 in relation to the inflatable bladder (20) to the internal portion of the inflatable bladder (20). The  
13 inlet port (30) provides a location for the sealing closure (30a) to be affixed to the mouth (30) to  
14 prevent deflation of the bladder (20). Again, an alternative closure (30a<sup>1</sup>) may be used.

15 It should be understood that the present invention includes the unique feature that the color of  
16 the bladder may cooperate with the colors of the stick to create yet other colors of visible light to the  
17 observer. For example, a “red” bladder with “yellow” chemiluminescent members, colored or  
18 lighted sticks will yield a “green” light visual pattern.

19 The chemiluminescent members (40), as shown in Fig. 1 are integral to the functionality of  
20 one embodiment of the present invention in the dark or lowly lighted environments, and may be  
21 activated before, during, or after insertion through the inlet port (30) into the inflatable bladder (20).  
22 It is preferable that the sticks be activated after the balloon is inflated. This allows for the toy to be  
23 activated in the dark or lowly lighted areas.

1           The chemiluminescent characteristic of the chemiluminescent members (40) is understood to  
2   be activated by slight bending or deforming each chemiluminescent member (40) from its original  
3   shape such that the chemiluminescently reactive chemicals contained within each chemiluminescent  
4   member (40) react to emit light from each chemiluminescent member (40) which then may be  
5   observed outside the inflatable bladder (20). Alternatively, there are frozen sticks (40) which may be  
6   activated by thawing. Lighted tubes 42 may be activated by pressing the bulb into electrical contact  
7   with the battery inside the tubual portion.

8           In one embodiment of the present invention, an elastic band (90) may be affixed to the  
9   bladder (20) so that the user can “punch” the bladder back and forth as the band flexes upon the  
10   punch’s impact. The attachment may be made at the end opposite the closure (30a<sup>1</sup>) as shown in  
11   Fig. 4.

12           A method for assembly of the luminescence toy of the present invention (10) includes  
13   providing an inflatable bladder (20) having an inlet port (30) located at a first terminus positioned  
14   such that one or more chemiluminescent members (40), colored sticks (41a or 41b), spherical balls  
15   (44), elliptical rollers (45) or lighted tube (42) may be inserted through the inlet port (30) into the  
16   inflatable bladder (20) (Figs. 2 and 3). The sticks or tubes are activated as set out above either  
17   before, during or after insertion through the inlet port (30) of the inflatable bladder (20). Either  
18   before, during or after activation of the sticks as set out above, the inflatable bladder (20) is inflated  
19   by an introduction of a gas through the mouth (30) (with or without the one-way closure valve (30a)  
20   until the inflatable bladder (20) is inflated to the desired extent. Once the inflatable bladder (20) is  
21   inflated to the extent desired, and the chemiluminescent members (40) have been inserted and  
22   activated or have been activated and inserted, a sealing closure (30a) is positioned on the inlet port  
23   (30) (if closure (30a ) is not used) so as to prevent deflation of the inflatable bladder (20) which now

1 contains one or more rolling members. After inflation of the inflatable bladder (20), the inflatable  
2 bladder (20) is substantially spherical in shape, depending on the degree of inflation. In practice, it  
3 has been found advantageous to fill the inflatable bladder (20) to the point of inflation such that the  
4 inflatable bladder (20) is substantially filled but leaves sufficient space and terminus area at the  
5 point of the inlet port (30) for the sealing closure(30a) to fit over the inlet port (30) thereby more  
6 dependably preventing deflation of the inflatable bladder (20).

7 Further, an elastic band (90) may be affixed to the bladder (20) at any convenient location to  
8 enable the user to snap the bladder back and forth. Fig. 1. shows the band (90) affixed at the inlet of  
9 the bladder. Fig. 2 shows the band (90) affixed to the closure (30a).

10 In kit form (10a)(Fig. 2), the luminescence toy is supplied in a package (80) with an  
11 inflatable bladder (20) having an inlet port (30), one or more chemiluminescent members (40) for  
12 activation, either before, during or after inflation or colored sticks (41a or 41b), spherical balls (44),  
13 elliptical rollers (45), or lighted tube (42), and a sealing closure(30a or 30a<sup>1</sup>) for fixation over the  
14 inlet port (30) after the inflation of the bladder having within it one or more sticks or tubes. Thus,  
15 the kit contains an inflatable bladder (20) having an inlet port (30), one or more rolling members  
16 securing closure (30a or 30a<sup>1</sup>)of the inlet port (30) so as to prevent deflation of the inflated bladder  
17 (20), an elastic band (90), and the packaging (80). The kit may include a variety of  
18 chemiluminescent members and hollow or solid colored sticks and light tubes, or any combination of  
19 these.

20 While the invention has been illustrated and described in detail in the drawings and foregoing  
21 description, the same is to be considered as illustrative and not restrictive in character, it being  
22 understood that only the preferred embodiment has been shown and described and that all changes  
23 and modifications that come within the spirit of the invention are desired to be protected.